



## SEQUENCE LISTING

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<110> De Robertis, Edward M.  
Bouwmeester, Tewis

<120> Endoderm, Cardiac and Neural Inducing  
Factors

<130> 510015-257

<140> US 09/903,325

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<151> 1996-06-20

<160> 10

<170> FastSEQ for Windows Version 3.0

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<211> 270

<212> PRT

<213> Xenopus

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Ser Lys Ile Leu Leu Val Asn Thr Lys Gly Leu Asp Glu Pro His Ile  
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Gly His Gly Asp Phe Gly Leu Val Ala Glu Leu Phe Asp Ser Thr Arg  
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Thr His Thr Asn Arg Lys Glu Pro Asp Met Asn Lys Val Lys Leu Phe  
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Ser Thr Val Ala His Gly Asn Lys Ser Ala Arg Arg Lys Ala Tyr Asn  
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Gly Ser Arg Arg Asn Ile Phe Ser Arg Arg Ser Phe Asp Lys Arg Asn  
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Thr Glu Val Thr Glu Lys Pro Gly Ala Lys Met Phe Trp Asn Asn Phe  
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Leu Val Lys Met Asn Gly Ala Pro Gln Asn Thr Ser His Gly Ser Lys  
145 150 155 160  
Ala Gln Glu Ile Met Lys Glu Ala Cys Lys Thr Leu Pro Phe Thr Gln  
165 170 175  
Asn Ile Val His Glu Asn Cys Asp Arg Met Val Ile Gln Asn Asn Leu

180 185 190  
 Cys Phe Gly Lys Cys Ile Ser Leu His Val Pro Asn Gln Gln Asp Arg  
 195 200 205  
 Arg Asn Thr Cys Ser His Cys Leu Pro Ser Lys Phe Thr Leu Asn His  
 210 215 220  
 Leu Thr Leu Asn Cys Thr Gly Ser Lys Asn Val Val Lys Val Val Met  
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 <212> PRT  
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<400> 3

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 Ile Glu Gln Phe Glu Gly Leu Leu Thr Thr Glu Cys Ser Gln Asp Leu  
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 Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys Glu Arg Ala Arg  
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 Ala Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His Thr Trp Pro Glu  
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 Ser Pro Glu Ala Ile Val Thr Val Glu Gln Gly Thr Asp Ser Met Pro  
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 His Cys Lys Cys Lys Pro Met Lys Ala Thr Gln Lys Thr Tyr Leu Lys  
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 195 200 205  
 Lys Cys His Asp Ala Thr Ala Ile Val Glu Val Lys Glu Ile Leu Lys  
 210 215 220  
 Ser Ser Leu Val Asn Ile Pro Lys Asp Thr Val Thr Leu Tyr Thr Asn  
 225 230 235 240  
 Ser Gly Cys Leu Cys Pro Gln Leu Val Ala Asn Glu Glu Tyr Ile Ile  
 245 250 255  
 Met Gly Tyr Glu Asp Lys Glu Arg Thr Arg Leu Leu Leu Val Glu Gly  
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&lt;210&gt; 4

&lt;211&gt; 1875

&lt;212&gt; DNA

&lt;213&gt; Xenopus frazzled

&lt;400&gt; 4

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&lt;210&gt; 5

&lt;211&gt; 896

&lt;212&gt; PRT

&lt;213&gt; Xenopus

&lt;400&gt; 5

21

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Glu Pro Pro Gly Thr Val Ile Ala Val Leu Ser Gln His Ser Ile Phe
35      40      45
Asn Thr Thr Asp Ile Pro Ala Thr Asn Phe Arg Leu Met Lys Gln Phe
50      55      60
Asn Asn Ser Leu Ile Gly Val Arg Glu Ser Asp Gly Gln Leu Ser Ile
65      70      75      80
Met Glu Arg Ile Asp Arg Glu Gln Ile Cys Arg Gln Ser Leu His Cys
85      90      95
Asn Leu Ala Leu Asp Val Val Ser Phe Ser Lys Gly His Phe Lys Leu
100     105     110
Leu Asn Val Lys Val Glu Val Arg Asp Ile Asn Asp His Ser Pro His
115     120     125
Phe Pro Ser Glu Ile Met His Val Glu Val Ser Glu Ser Ser Ser Val
130     135     140
Gly Thr Arg Ile Pro Leu Glu Ile Ala Ile Asp Glu Asp Val Gly Ser

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 Asp Val Leu Thr Arg Ala Asp Gly Val Lys Tyr Ala Asp Leu Val Leu  
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 Met Arg Glu Leu Asp Arg Glu Ile Gln Pro Thr Tyr Ile Met Glu Leu  
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 Ser Thr Ile Ala Val Asp Leu Val Glu Asp Ala Pro Leu Gly Tyr Leu  
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 Thr Val Asn Ala Gly Val Ala Tyr Ile Pro Glu Thr Ala Thr Lys Glu  
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                                  370                      375                      380  
 Gly Gln Val Arg Cys Thr Leu Tyr Gly His Glu His Phe Lys Leu Gln  
 385                                   390                      395                      400  
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 Gly Phe Pro Ser Leu Lys Thr Lys Lys Tyr Tyr Thr Val Lys Val Ser  
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 Ala Arg Asp Ser Asp Ser Asp Gln Asn Gly Lys Val Asn Tyr Arg Leu  
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 Val Asp Ala Lys Val Met Gly Gln Ser Leu Thr Thr Phe Val Ser Leu  
                                  500                      505                      510  
 Asp Ala Asp Ser Gly Val Leu Arg Ala Val Arg Ser Leu Asp Tyr Glu  
                                  515                      520                      525  
 Lys Leu Lys Gln Leu Asp Phe Glu Ile Glu Ala Ala Asp Asn Gly Ile  
                                  530                      535                      540  
 Pro Gln Leu Ser Thr Arg Val Gln Leu Asn Leu Arg Ile Val Asp Gln  
 545                                   550                      555                      560

Asn Asp Asn Cys Pro Val Ile Thr Asn Pro Leu Leu Asn Asn Gly Ser  
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 Gly Glu Val Leu Leu Pro Ile Ser Ala Pro Gln Asn Tyr Leu Val Phe  
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 Gln Leu Lys Ala Glu Asp Ser Asp Glu Gly His Asn Ser Gln Leu Phe  
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 Tyr Thr Ile Leu Arg Asp Pro Ser Arg Leu Phe Ala Ile Asn Lys Glu  
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 Ser Gly Glu Val Phe Leu Lys Lys Gln Leu Asn Ser Asp His Ser Glu  
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 Ser Thr Asn Ala Thr Val Lys Phe Ile Leu Thr Asp Ser Phe Pro Ser  
                   660                  665                  670  
 Asn Val Glu Val Val Ile Leu Gln Pro Ser Ala Glu Glu Gln His Gln  
                   675                  680                  685  
 Ile Asp Met Ser Ile Ile Phe Ile Ala Val Leu Ala Gly Gly Cys Ala  
                   690                  695                  700  
 Leu Leu Leu Leu Ala Ile Phe Phe Val Ala Cys Thr Cys Lys Lys Lys  
 705                  710                  715                  720  
 Ala Gly Glu Phe Lys Gln Val Pro Glu Gln His Gly Thr Cys Asn Glu  
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 Cys Ser Val Ser Ser Asn Gln Glu Gln His Gln Gln Thr Gly Ile Lys  
                   770                  775                  780  
 His Ser Ile Ser Val Pro Ser Tyr His Thr Ser Gly Trp His Leu Asp  
 785                  790                  795                  800  
 Asn Cys Ala Met Ser Ile Ser Gly His Ser His Met Gly His Ile Ser  
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 Thr Lys Val Gln Trp Ala Lys Glu Ile Val Thr Ser Met Thr Val Thr  
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 Leu Ile Leu Val Glu Asn Gln Lys Arg Arg Ala Leu Ser Ser Gln Cys  
                   835                  840                  845  
 Arg His Lys Pro Val Leu Asn Thr Gln Met Asn Gln Gln Gly Ser Asp  
                   850                  855                  860  
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 865                  870                  875                  880  
 Gly Thr Ala His Cys Asn Met Lys Arg Ala Ile Asp Cys Leu Thr Leu  
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&lt;210&gt; 6

&lt;211&gt; 3657

&lt;212&gt; DNA

&lt;213&gt; Xenopus

&lt;400&gt; 6

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120

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&lt;210&gt; 7

&lt;211&gt; 323

&lt;212&gt; PRT

&lt;213&gt; Mouse FRZB-1

&lt;400&gt; 7

B

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20     25     30
Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser Leu Pro Trp
35     40     45
Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn
50     55     60
Ala Ile Leu Ala Met Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys
65     70     75     80
Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
85     90     95
Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys
100    105    110
Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His
115    120    125
Ser Trp Pro Glu Ser Leu Ala Cys Asp Glu Leu Pro Val Tyr Asp Arg
130    135    140
Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp Gly Ala Asp
145    150    155    160
Phe Pro Met Asp Ser Ser Thr Gly His Cys Arg Gly Ala Ser Ser Glu
165    170    175
Arg Cys Lys Cys Lys Pro Val Arg Ala Thr Gln Lys Thr Tyr Phe Arg
180    185    190
Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Val Lys Met
195    200    205
Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys
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Ser Gly Cys Leu Cys Pro Pro Leu Thr Val Asn Glu Glu Tyr Val Ile
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